

SELECTION & SPECIFICATION DATA

Generic Type	Charflame is a single-component intumescent coating, PAE-free and water-based, for fire protection of internal steel structures.
Description	Charflame is designed to provide fire resistance while maintaining the load-bearing capacity of structural steel. Up to 90 minutes of fire resistance is provided for I-section beams and columns, and up to 30 minutes of fire resistance for hollow section columns.
Color	White and grey
Finish	Matte
Primer	<p>The primer system must not exceed 150 microns of total dry film thickness (DFT), with an absolute maximum allowed in overlap areas of only 200 microns of dry film thickness (DFT). Primed steel surfaces that show a high visible gloss must be sanded to achieve a matte finish. If a zinc-rich primer is used, the surface should be checked for zinc salts. Any salts must be completely removed before applying Charflame. Sealing zinc-rich primers is recommended to prevent blistering.</p> <p>The anti-corrosion primer must be one of those approved in the European Technical Evaluation (ETE) document and applied according to the manufacturer's recommendations. These must have a fire reaction classification certificate bs2d0 according to ENV-13501-1.</p> <p>It is recommended to prepare a small test area with the intumescent before starting the full application of the intumescent coating to ensure that there are no issues with compatibility, adhesion, or drying, etc.</p> <p>Contact Carboline technical service to obtain a complete list of recommended primers.</p>
Recommended Thickness	350-550 microns dry film thickness (DFT) per coat, depending on the method of application. Higher thickness's may be possible, however they will impact the drying times. The thickness's above are recommended for optimum film build and drying balance. For required thickness, consult Loading Tables.
Solid(s) Content	71% ± 2% by volume
Theoretical Coverage Rates	1 m ² /kg at 500 microns
VOC Value(s)	<11 g/l
Topcoats	<p>The type, DFT and number of coats of the topcoat must comply with the specifications. The specifications will be based on the relevant ETA. The topcoat must be applied according to the manufacturer's instructions. Charflame must be completely dry and cured before applying the topcoat. Under type Y environmental exposure conditions, Charflame can be sealed with a topcoat that has a bs1d0 fire reaction rating, as specified in its ETA according to the EN 13501-1 standard.</p> <p>As a good practice, it is recommended to prepare a small test area before starting full application to ensure there are no compatibility, adhesion, or drying issues, etc.</p> <p>Contact Carboline technical service for a complete list of approved topcoat coatings.</p>
Density	1.40 ± 0,03 g/cm ³

SUBSTRATES & SURFACE PREPARATION

General	Charflame should only be used on substrates which have had all mill-scale and blasted to an average blast profile of 75 microns, with a minimum of 40 microns, and a cleanliness of Sa 2 ½ of ISO 8501-1 before applying a recommended primer. All surfaces must be clean, dry and free from contamination before coating application.
----------------	--

MIXING & THINNING

- Mixing** | Charflame is supplied ready for use and should not be diluted but should be mechanically stirred prior to use until homogeneous. Avoid excessive mixing, as this may break down the thixotropy and affect the coating's ability to achieve the desired wet film thickness (WFT).
- Thinning** | Clean potable water.

APPLICATION EQUIPMENT GUIDELINES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

- Airless Spray** | Airless spray equipment is recommended and should match these guidelines: Operating Pressure: 2500 - 3000psi (175 - 210kg/cm²)
- Spray Tips** | 0.48-0.53 mm (0.019"-0.021")
- Fan Size** | 20 - 40°.
- Hose Length** | Maximum 60 metres, in-line filters should not normally be used.
- Material Hose** | 10 mm (3/8") internal diameter minimum.

APPLICATION PROCEDURES

- General** | Airless spray is recommended, although brush or roller can also be used for small areas and repairs.
Charflame is recommended for application and use on dry protected structural steel only. If the steel coating is allowed to get wet, it is likely to be damaged – blistering and wrinkling may occur.
Charflame should only be applied when the air and steel temperatures are above 5°C. Relative humidity should be below 85%.
Steel surface temperature should be a minimum of 3°C above the dew point.
Ensure the substrate is dry and free from contact with rain or condensation during the application and drying of Charflame.
Protect Charflame from strong winds and high temperatures during application to avoid drying issues and surface defects. In these conditions, thinner coats are recommended. Drying time depends on atmospheric temperature, steel temperature and air movement.
For guidance, consult Carboline technical service.

CURING SCHEDULE

Surface Temp.	Dry to Recoat
20°C (68°F)	24 Hours

These figures are given as guidance only at 450 microns DFT and 60% Relative Humidity. Other factors such as air movement, temperature and coating thickness must be considered.

CLEANUP & SAFETY

- Cleanup** | Fresh paint can be removed using water. Dried on paint may be removed using a paint scraper. Spray equipment must only be cleaned using water. Spray equipment must only be cleaned using water immediately after use.

CLEANUP & SAFETY

Safety | USE IN WELL VENTILATED CONDITIONS and ensure all recommended protective equipment is worn during handling & use of this product. For full recommendation, refer to safety data sheet. Safety data sheet must be read and understood before use.

Overspray | All adjacent and finished surfaces shall be protected from damage and overspray.

MAINTENANCE

General | Damaged areas should be abraded back to a sound surface. The surface should then be clean and dry before re-applying. Once repaired, the original specification should be reinstated.

TESTING / CERTIFICATION / LISTING

EN Standards | EN 13381-8 – Structural Steel
BS 476 Part 21 - Structural Steel
European Technical Approval - ETA 15/0146
(for other certification requirements, contact Carboline Technical Service.>

PACKAGING, HANDLING & STORAGE

Shelf Life | 9 months at 20°C
(If the product is stored under the recommended conditions and kept in its original unopened packaging).

Storage | Store indoors, in a dry environment, between 5 °C and 35 °C. Avoid freezing.

Packaging | 25 kg drums.

WARRANTY

To the best of our knowledge the technical data contained herein is true and accurate on the date of publication and is subject to change without prior notice. User must contact Carboline to verify correctness before specifying or ordering. No guarantee of accuracy is given or implied. Carboline warrants our products to be free of manufacturing defects in accord with applicable Carboline quality control procedures. THIS WARRANTY IS NOT VALID WHEN THE PRODUCT IS NOT: (1) APPLIED IN ACCORDANCE WITH CARBOLINE'S SPECIFICATIONS, AND/OR (2) PROPERLY STORED, CURED, AND USED UNDER NORMAL OPERATING CONDITIONS. Carboline assumes no responsibility for coverage, performance, injuries, or damages resulting from use of the product. If this product is found not to perform as specified upon inspection by a Carboline representative during the warranty period, Carboline's sole obligation, if any, is to replace the Carboline product(s) proven to be defective or refund the purchase price thereof, at Carboline's sole option. Carboline shall not be liable for any other losses or damages. This warranty excludes (1) labor and costs of labor for the application or removal of any product, and (2) any incidental or consequential damages, whether based on breach of express or implied warranty, negligence, strict liability or any other legal theory. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY CARBOLINE, EXPRESS OR IMPLIED, STATUTORY, BY OPERATION OF LAW, OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. All of the trademarks referenced above are the property of Carboline International Corporation unless otherwise indicated. The whole text of this Product Data Sheet, as well as the documents derived from it, have been written in English, and for legal purposes the English version shall prevail.